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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/822,145	04/12/2004	Zong Kai Yang	Q80815	1166
23373 7590 09/23/2008 SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800 WASHINGTON, DC 20037			EXAMINER JAIN, RAJ K	
			ART UNIT 2616	PAPER NUMBER
			MAIL DATE 09/23/2008	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/822,145

**Applicant(s)**

YANG ET AL.

**Examiner**

RAJ K. JAIN

**Art Unit**

2616

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 11 June 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 8-12 and 18-20 is/are rejected.
- 7) ☒ Claim(s) 3, 5-7 and 13-17 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB-083)
- Paper No(s)/Mail Date \_\_\_\_\_

- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *General Remarks*

1. Per applicant's correction, objection to claims 2 and 11 is withdrawn.
2. Per applicant's correction, rejection to 3, 14, 15 and 17 under **35 USC § 112** is withdrawn.

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 2 and 8-10 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by Shao et al (US 2004/0170186 A1).

Regarding claim(s) 1, Shao discloses a packet scheduling method (see abstract, Fig. 1) comprising: (a) classifying a stream according to at least one of a data rate and a length of a packet (Fig.1 incoming traffic streams are fed to classifier 120 and are separated according to specific types; paras 40, 43, 44); (b) if the packet of the classified stream is a first packet, storing the packet in a first stream queue, and if the packet of the classified stream is a subsequent packet, storing the packet in a second stream queue (packets are stored based on their classification paras 44, different packets are queued using different MCS levels); (c) counting a virtual start service time of the packet stored in the first stream queue according to a weighted fairness queuing method (Fig. 2, ref. 220 abstract, Para 29, virtual start time is determined for a packet); and (d) counting a virtual start service time of the packet stored in the second stream queue as a virtual start service time of the previous packet (Para 60 the virtual start time of next queued packet in second stream is same as virtual time of previous packet in the previous queue).

Regarding claim(s) 2, Shao discloses WF2Q or WF2Q+ algorithm (paras 44 and 93, while Shao only discloses WFQ, it is well known in the arts the WF2Q algorithms and its implementation which are similar to WFQ).

Regarding claim(s) 8, Shao discloses the first stream queue of step (b) is classified according to a data rate of the stream (paras 40-44).

Regarding claim(s) 9, Shao discloses the first stream queue of step (c) is classified according to a length of the packet of the stream (paras 40-44).

Regarding claim(s) 10, Shao discloses the first stream queue of step (b) is classified according to a data rate of the stream and a length of the packet (paras 40-44).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4, 11, 12 and 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shao et al (US 2004/0170186 A1) in view of Chiussi et al (USP 6,693,913 B1).

Regarding claim(s) 4, 11, Shao discloses a packet scheduling method and apparatus (see abstract, Fig. 1) comprising: (a) classifying a stream according to at least one of a data rate and a length of a packet (Fig.1 incoming traffic streams are fed to classifier 120 and are separated according to specific types; paras 40, 43, 44); (b) if the packet of the classified stream is a first packet, storing the packet in a first stream queue, and if the packet of the classified stream is a subsequent packet, storing the packet in a second stream queue (packets are stored based on their classification paras 44, different packets are queued using different MCS levels);

Shao fails to disclose a SEFF strategy. Chiussi discloses a SEFF strategy (col 3 lines 39-64, col 4 lines 16-27). Seff selector allows packet selection based on a minimum service timestamp among sessions and thus reducing backlogged flows.

Thus it would have been obvious at the time the invention was made to incorporate the teachings of Chiussi within Shao so as to maintain proper session flow amongst backlogged queues.

Regarding claim(s) 12, Shao discloses a virtual start service time of the packet stored in the first stream queue according to a weighted fairness queuing method, and further operable to count a virtual start service time of the packet stored in the second stream queue as a virtual start service time of the previous packet (Para 60 the virtual start time of next queued packet in second stream is same as virtual time of previous packet in the previous queue).

Regarding claim(s) 18, Shao discloses the first stream queue of step (b) is classified according to a data rate of the stream (paras 40-44).

Regarding claim(s) 19, Shao discloses the first stream queue of step Co) is classified according to a length of the packet of the stream (paras 40-44).

Regarding claim(s) 20, Shao discloses the first stream queue of step (b) is classified according to a data rate of the stream and a length of the packet (paras 40-44).

#### ***Allowable Subject Matter***

Claims 3, 5-7, 13-17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### ***Response to Arguments***

Applicant's arguments filed June 11, 2008 have been fully considered but they are not persuasive.

With respect to claim 1, Applicant contends "Shao does not disclose or suggest at least wherein if the packet of the classified stream is a first packet, storing the packet in a first stream queue, and if the packet of the classified stream is a subsequent packet, storing the packet in a second stream queue".

Examiner respectfully disagrees, Shao classifies packet streams based on length (emphasis added) and WFQ (paras 23 & 44), the data rate is determined by the modulation scheme employed for the particular type of data being transmitted (paras 5 & 40). Incoming packets are classified by classifier 120 (Fig. 1) and forwarded to one queue pair 170 (para 37). First of all packets are shaped before being queued (para 43) and then differentiated by MCS levels within the same class (para 54) and queued correspondingly using a delay factor based on packet length (paras 63 & 79) to appropriate queues 170. Thus a first packet of a stream may have different delay factor than the second stream and therefore will be queued separately, and therefore the Examiner asserts Shao inherently discloses queuing of subsequent packets to a second stream queue using a delay factor based on packet length which can be different than say the first packet. Thus since Shao does disclose all recited features of claim 1, the rejection to claim 1 is sustained.

With respect to claim 11, Applicant contends one would not be motivated to combine Chiussi within Shao to arrive at applicant's invention. Examiner respectfully disagrees, a SEFF selector allows packet selection based on a minimum service timestamp among sessions and thus reducing backlogged flows. Thus it would have been obvious at the time the invention was made to incorporate the teachings of Chiussi within Shao so as to maintain proper session flow amongst backlogged queues.

The Examiner asserts that the motivation provided is valid and proper and therefore the rejection to claim 11 is sustained.

Furthermore, the rejection to claims 4, 12, 18-20 is sustained based on limitations within the cited art(s).

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

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shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to RAJ K. JAIN whose telephone number is (571)272-3145. The examiner can normally be reached on M-TH 7AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi Pham can be reached on 571-272-3179. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

***/Raj K. Jain/***

***Examiner - Art Unit 2616***

September 23, 2008

*/Chi H Pham/*

Supervisory Patent Examiner, Art Unit 2616

9/19/08